



A simple heat alert system for Melbourne, Australia

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Abstract:

A simple heat alert system, based solely on predicted maximum and minimum daily temperatures, has been developed for the city of Melbourne in southeast Australia. The system is based upon a demonstration that, when mean daily temperature exceeds a threshold of 30 degrees C (mean of today's maximum temperature and tonight's minimum temperature), the average daily mortality of people aged 65 years or more is about 15-17% greater than usual. Similar numbers of excess deaths also occur when daily minimum temperatures exceed 24 degrees C (increases of 19-21% over expected death rate), so a heat alert system based solely on this widely available weather forecast variable is also feasible. No strong signal of excess heat-related deaths appears when the data are stratified using daily maximum temperatures. This may be because in Melbourne some days with very high maximum temperatures will be affected by the passage of cool changes and cold fronts in the afternoon, leading to a rapid drop in temperature (i.e., some days with high maximum temperatures will not continue to be hot throughout the day and into the evening). A single day with temperatures exceeding the thresholds noted above is sufficient to cause this increase in mortality, rather than requiring an extended heat wave. The increased daily mortality does not appear to represent a short-term advancement of mortality.

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Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Climate Change and Human Health Literature Portal

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

Other Health Impact: heat related mortality

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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